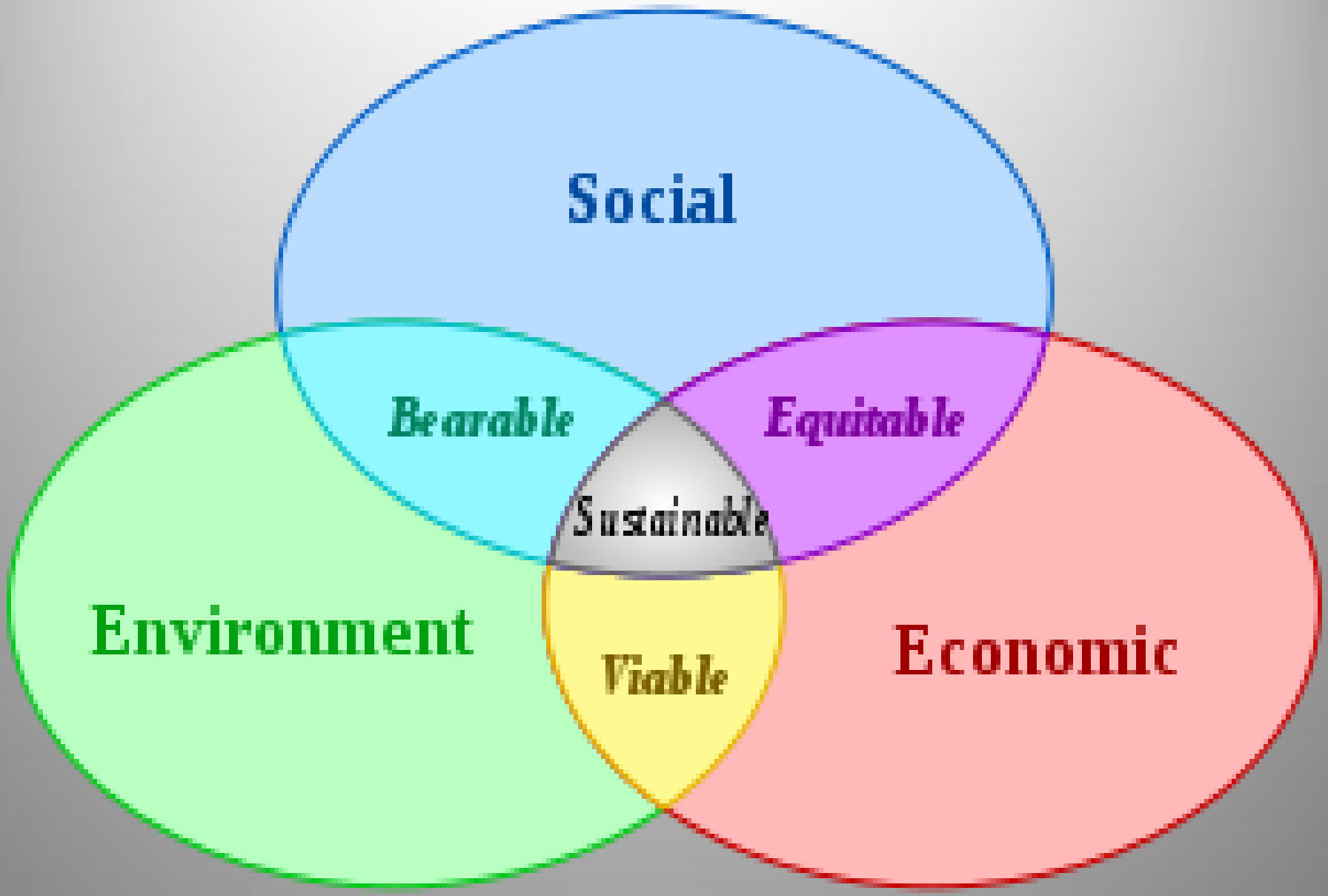
Sustainable Development
What is it, and how do we do it?

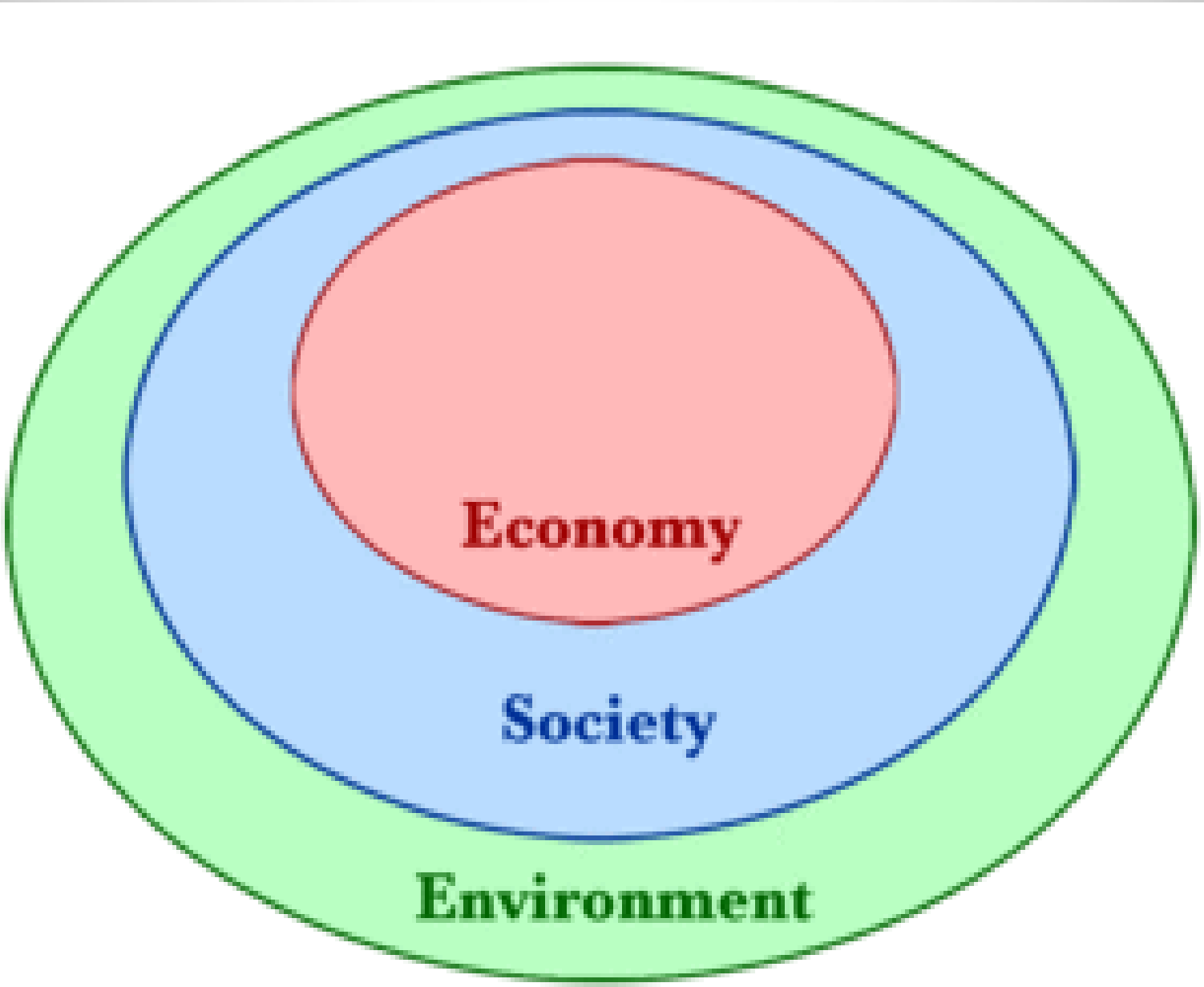
www.tonyjuniper.com

The classic definition
Sustainable development is….

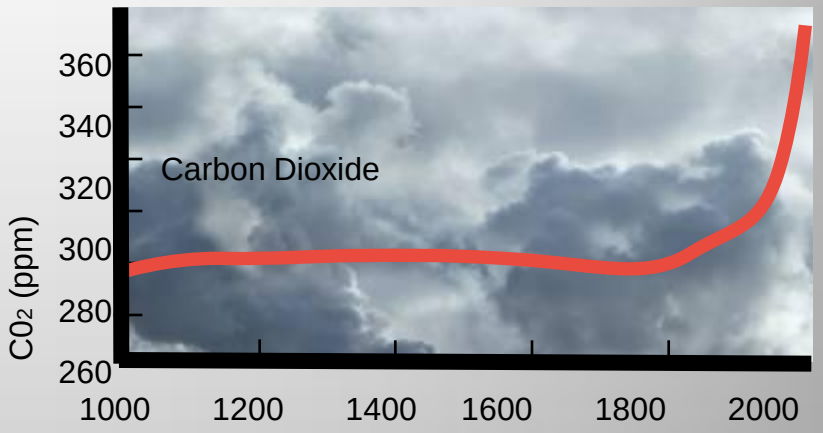
“Development that meets the needs of the present without compromising the ability of future generations to meet their own needs”

The Brundtland Commission on Environment and Development, *Our Common Future* 1987


Social
Bearable
Equitable
Sustainable
Environment
Viable
Economic

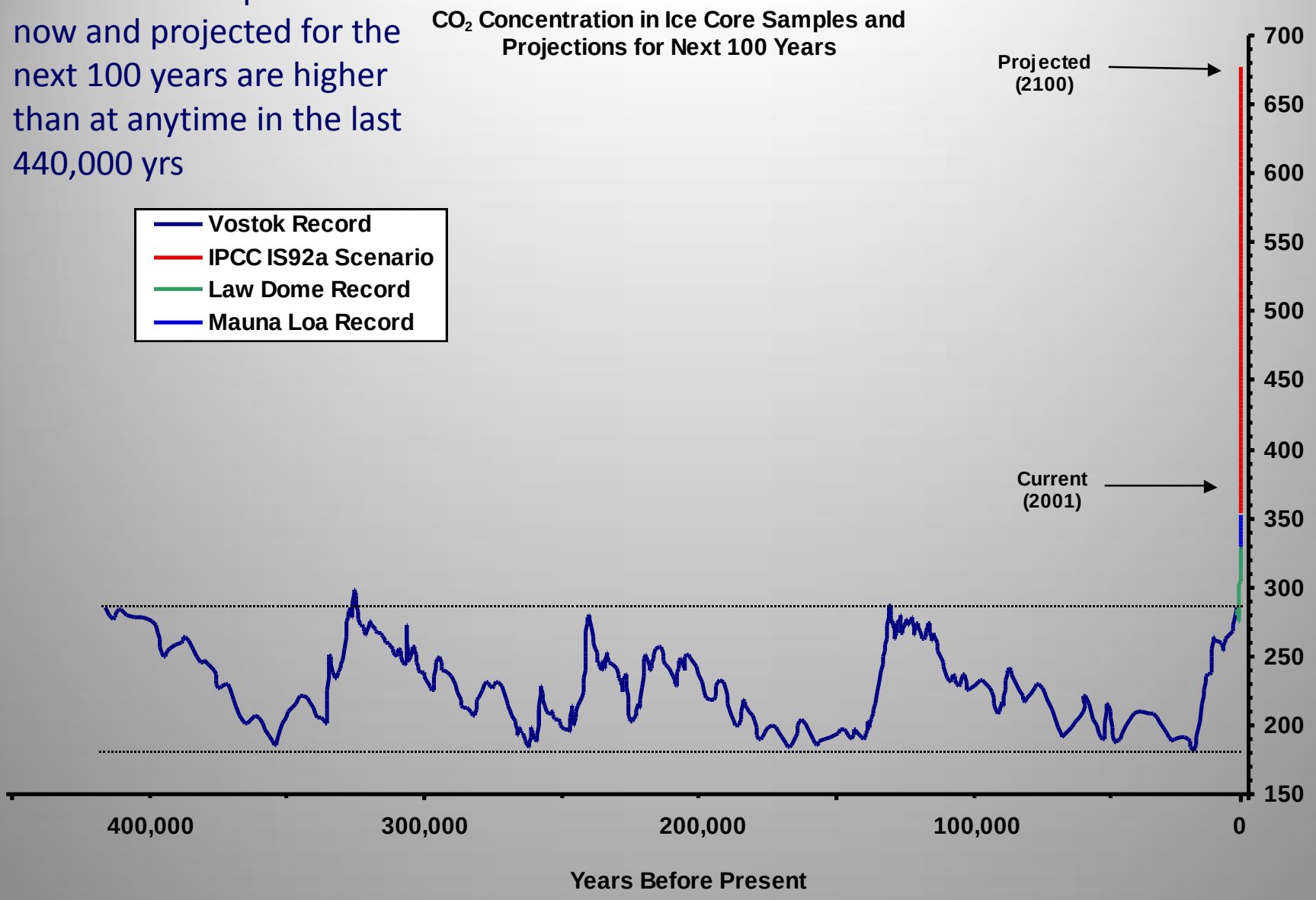

Economy
Society
Environment

Carbon Dioxide in the atmosphere has risen by over 30% due to human activities

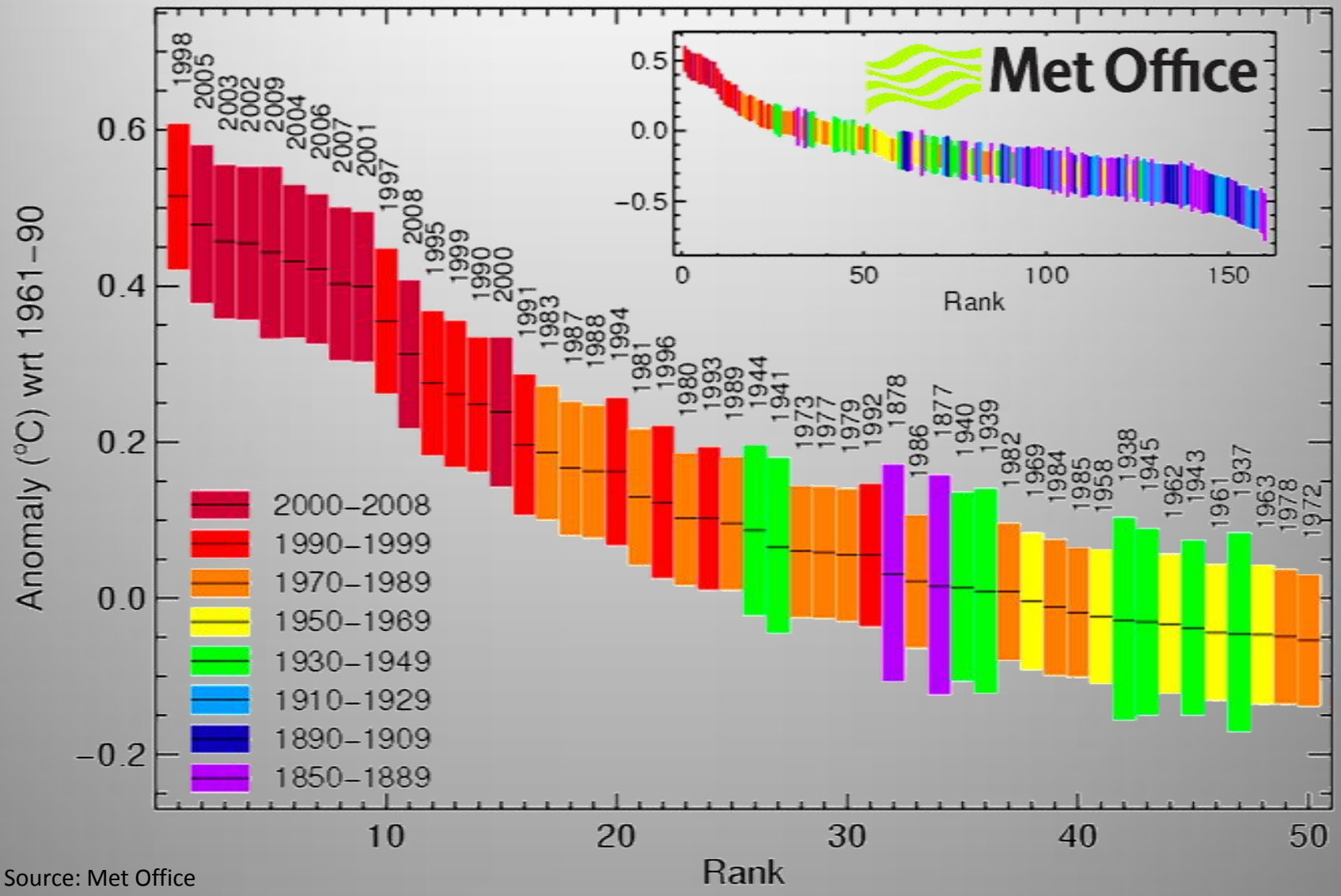


$C0_2$ concentrations are higher now than at anytime in at least the last 800,000 years – and are set to rise far higher

Levels of atmospheric CO2 now and projected for the next 100 years are higher than at anytime in the last 440,000 yrs

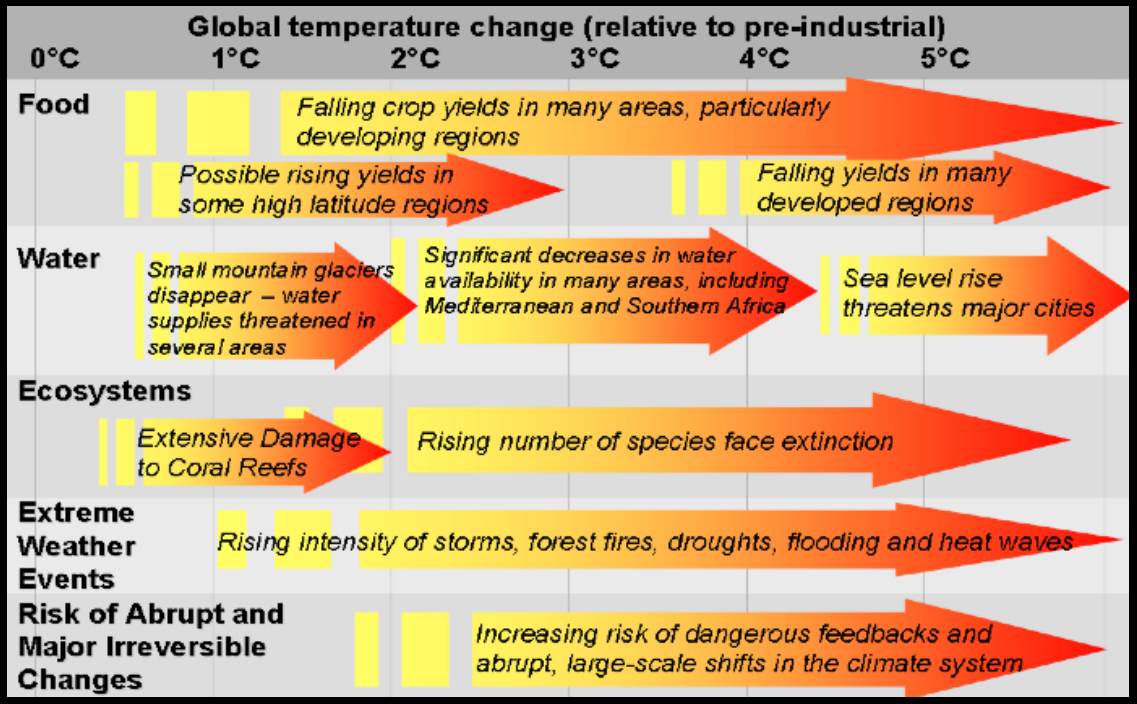


Global surface temperatures continue to rise



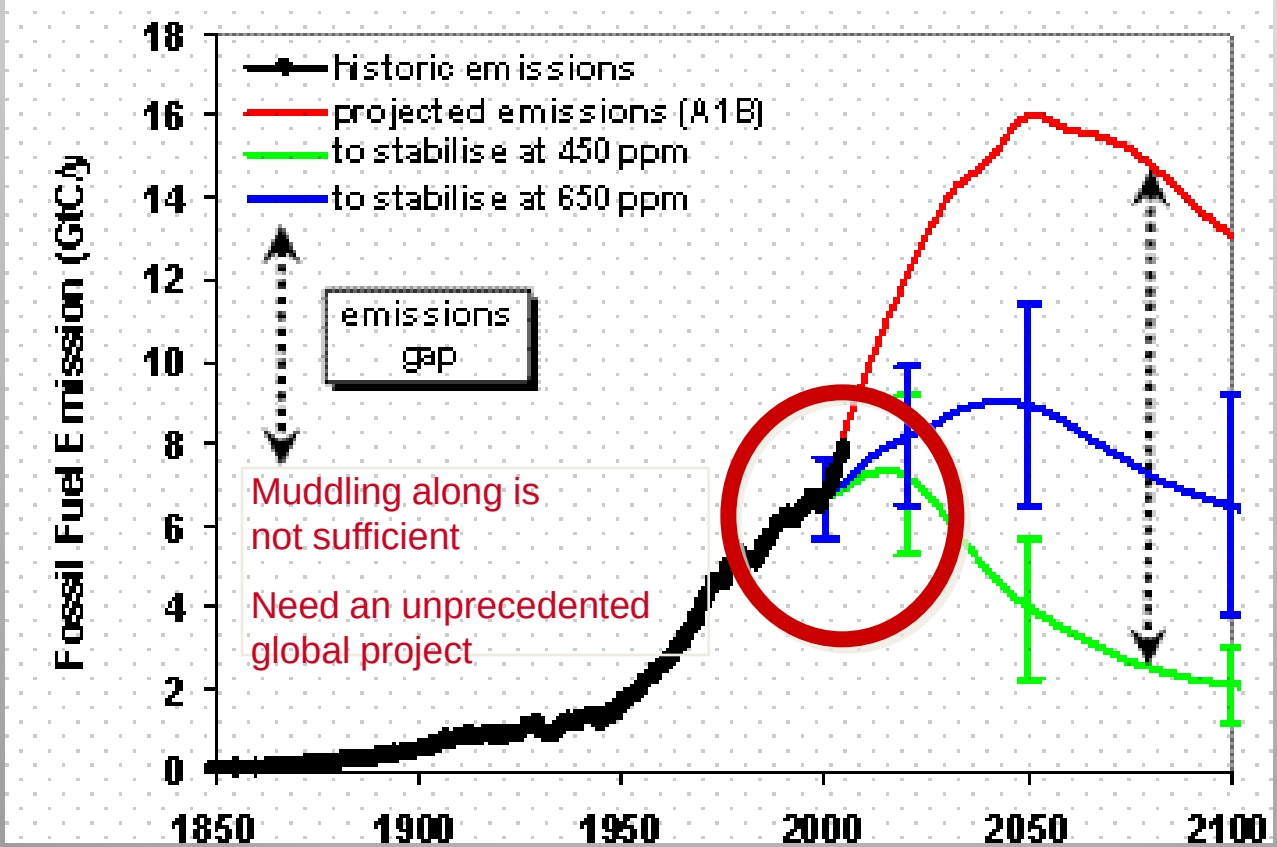
Source: Met Office

Projected impacts of climate change

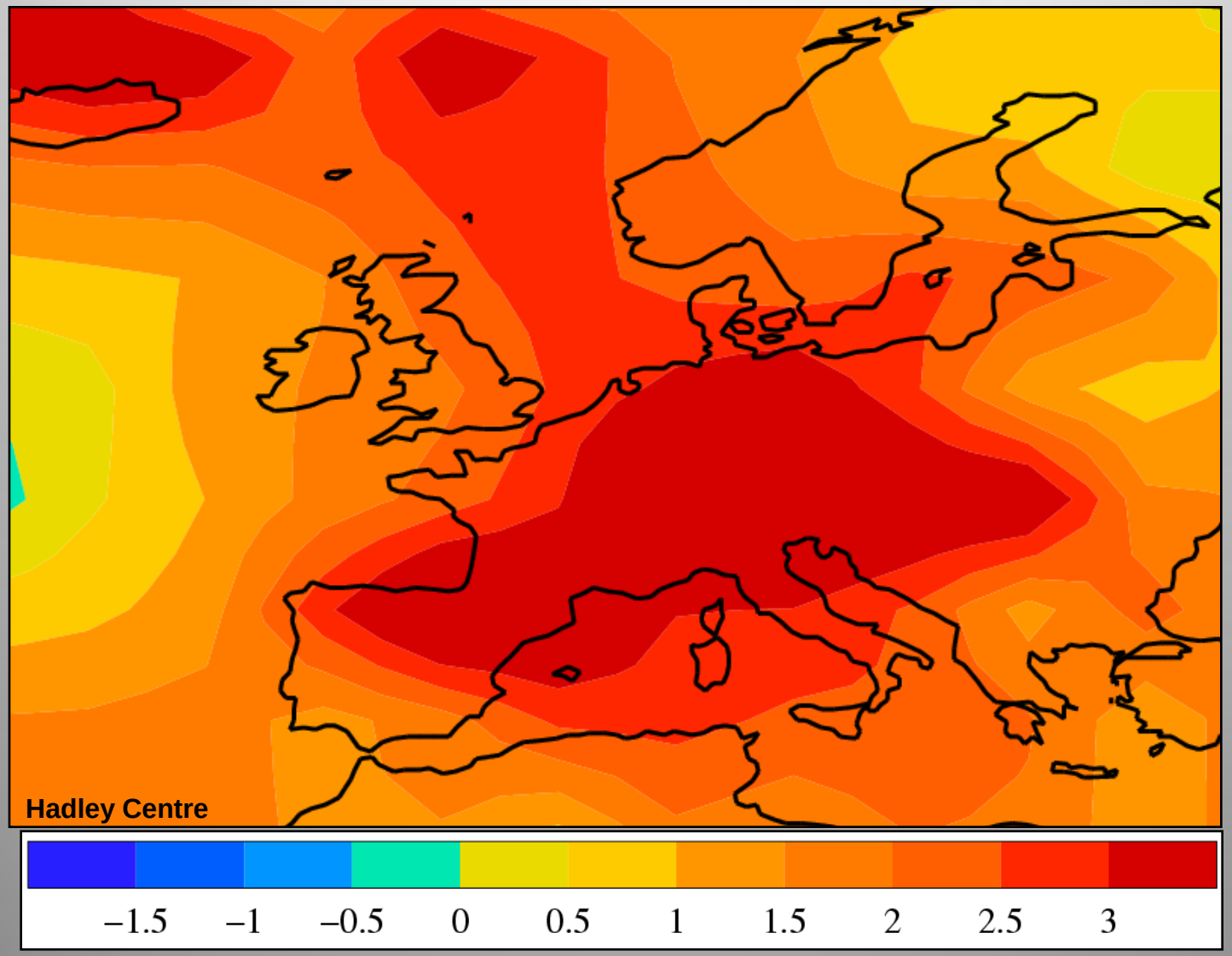


Stern Review

The climate problem

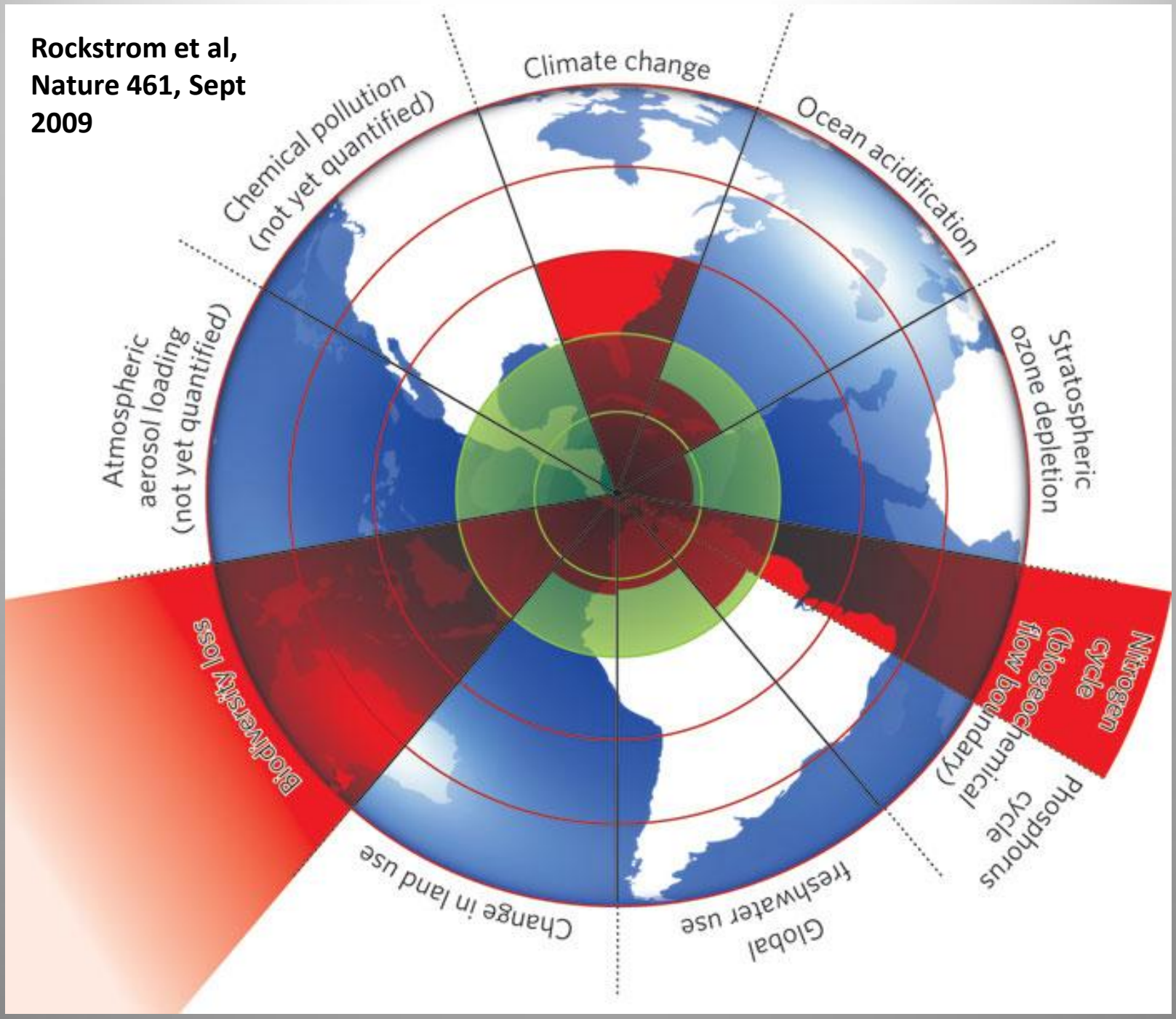


AUGUST 2003 EUROPEAN HEATWAVE
anomaly relative to late 19th century.



Adapting to inevitable change

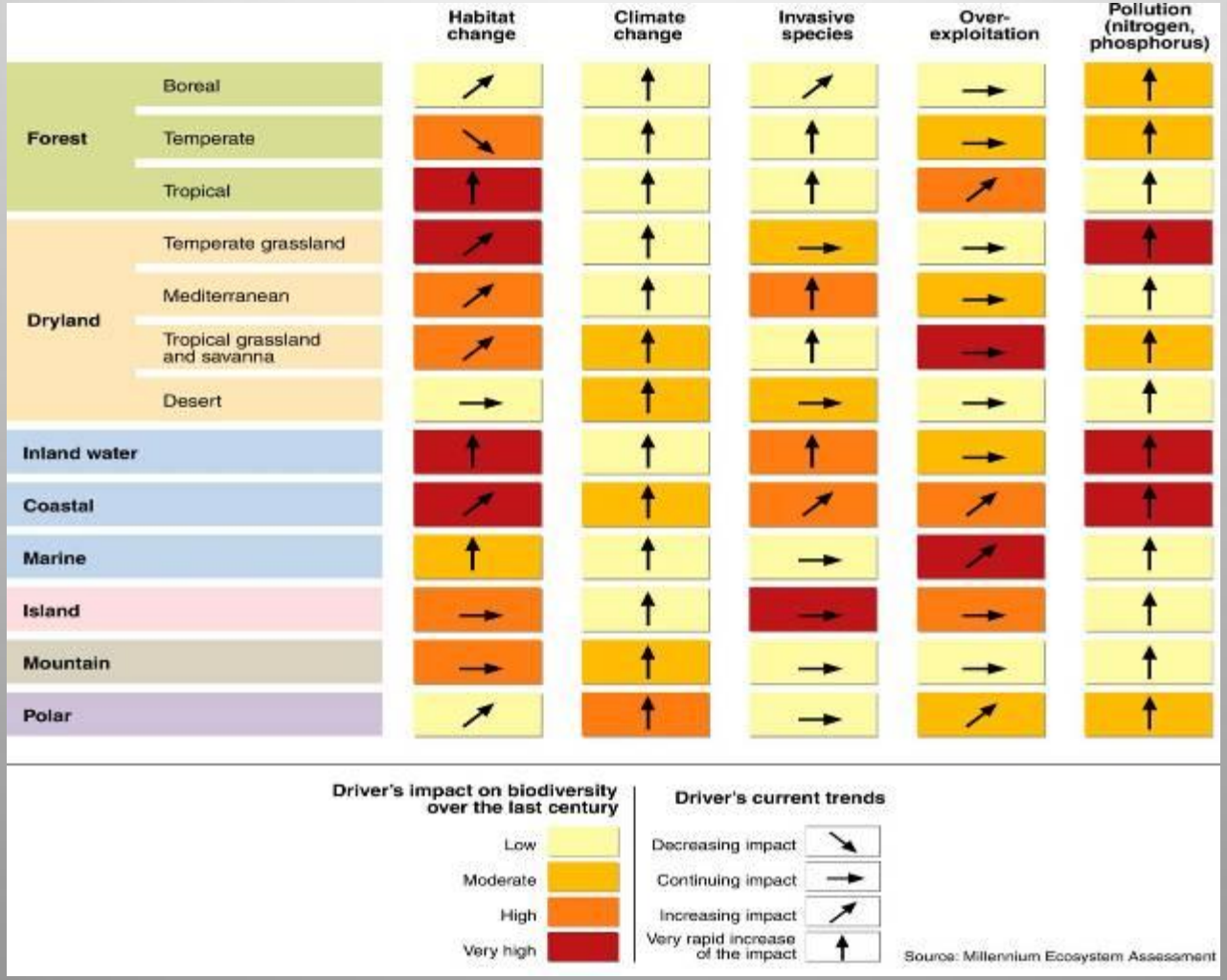
Rockstrom et al, Nature 461, Sept 2009

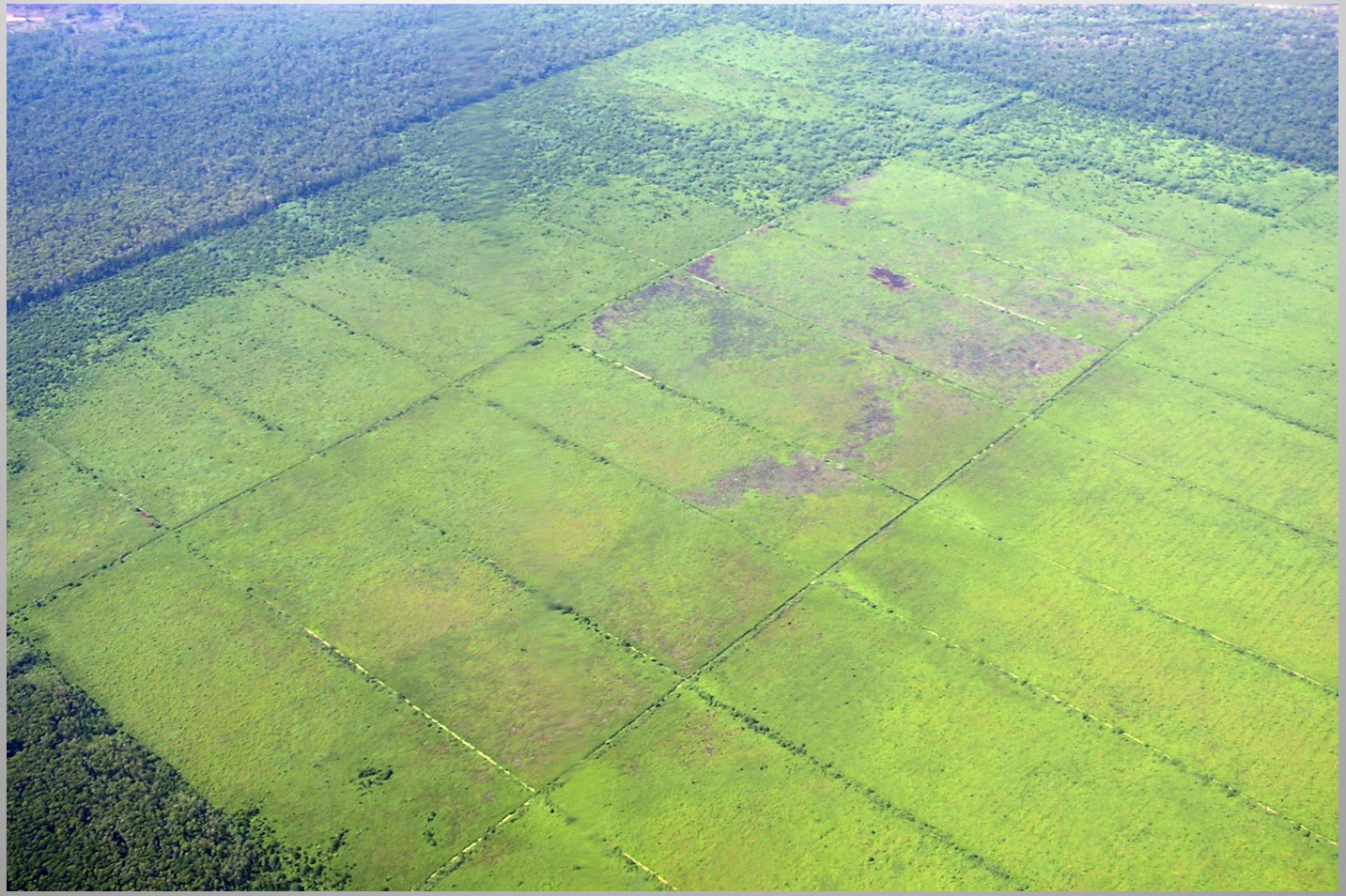


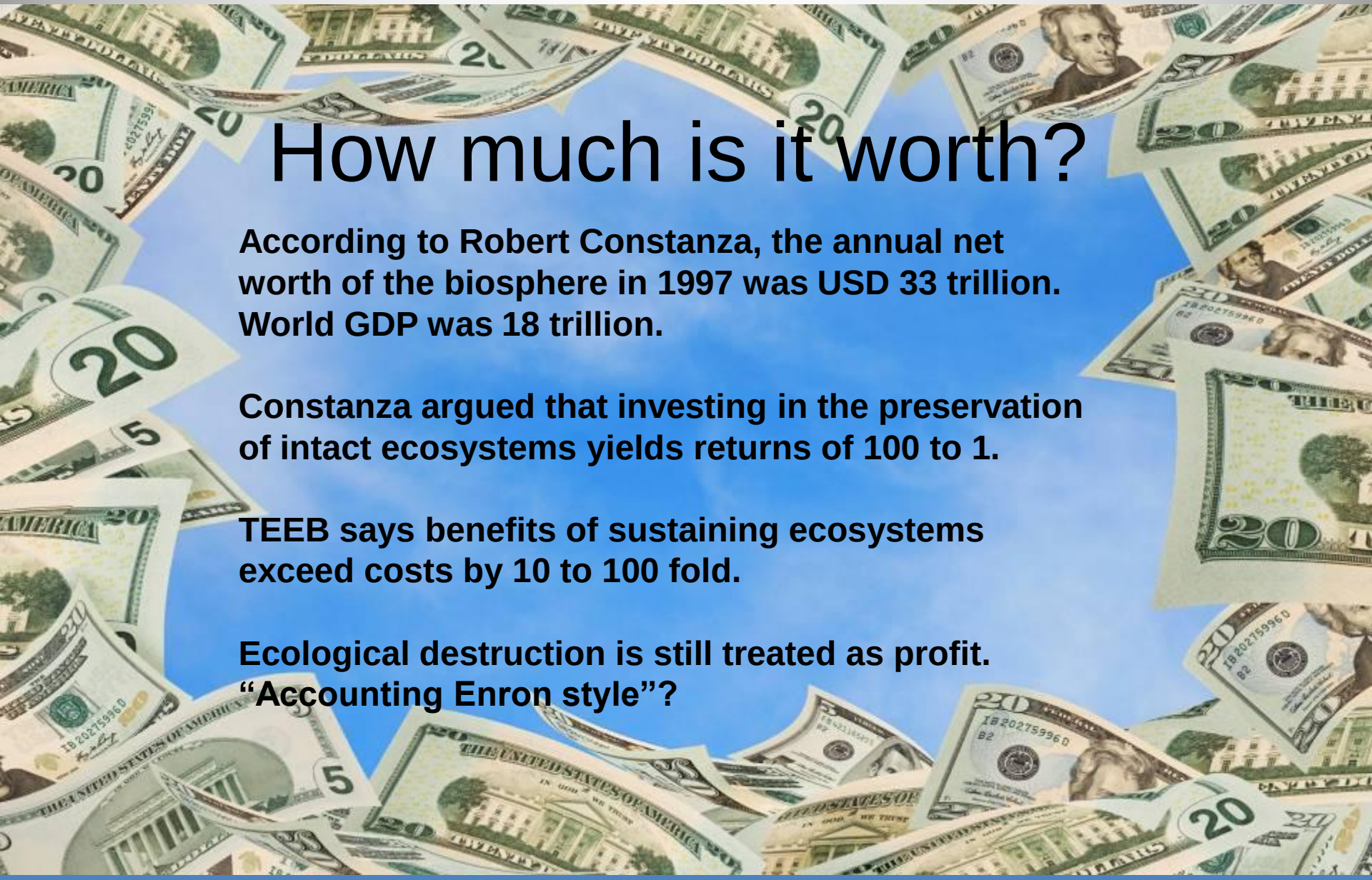
Ecosystem services

- Biodiversity – medicines, genetic resources
- Climate stability
- Mitigation of floods and droughts
- Renewing of soil fertility
- Pollination
- Pest control
- Seed dispersal
- Aesthetic beauty
- Water services and rainfall generation

Un-Millenium Ecosystem Assessment







How much is it worth?

According to Robert Constanza, the annual net worth of the biosphere in 1997 was USD 33 trillion. World GDP was 18 trillion.

Constanza argued that investing in the preservation of intact ecosystems yields returns of 100 to 1.

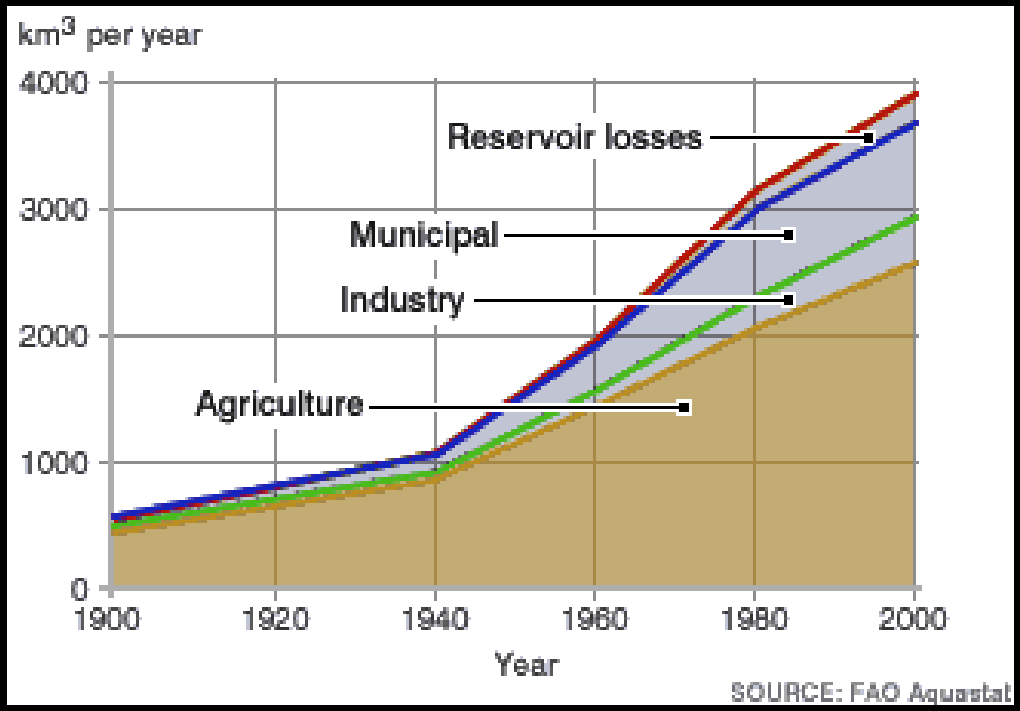
TEEB says benefits of sustaining ecosystems exceed costs by 10 to 100 fold.

Ecological destruction is still treated as profit. "Accounting Enron style"?

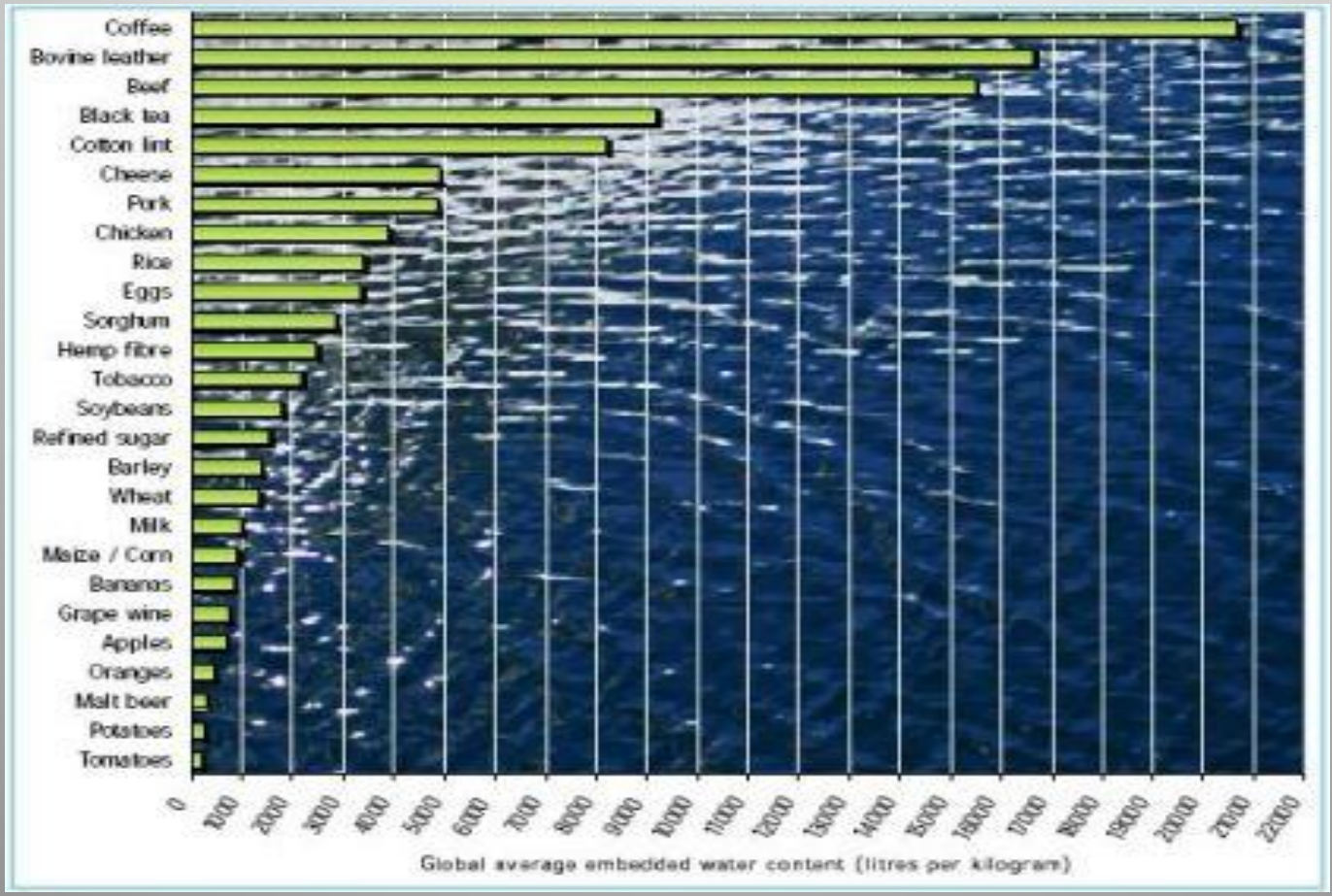
Finite resources

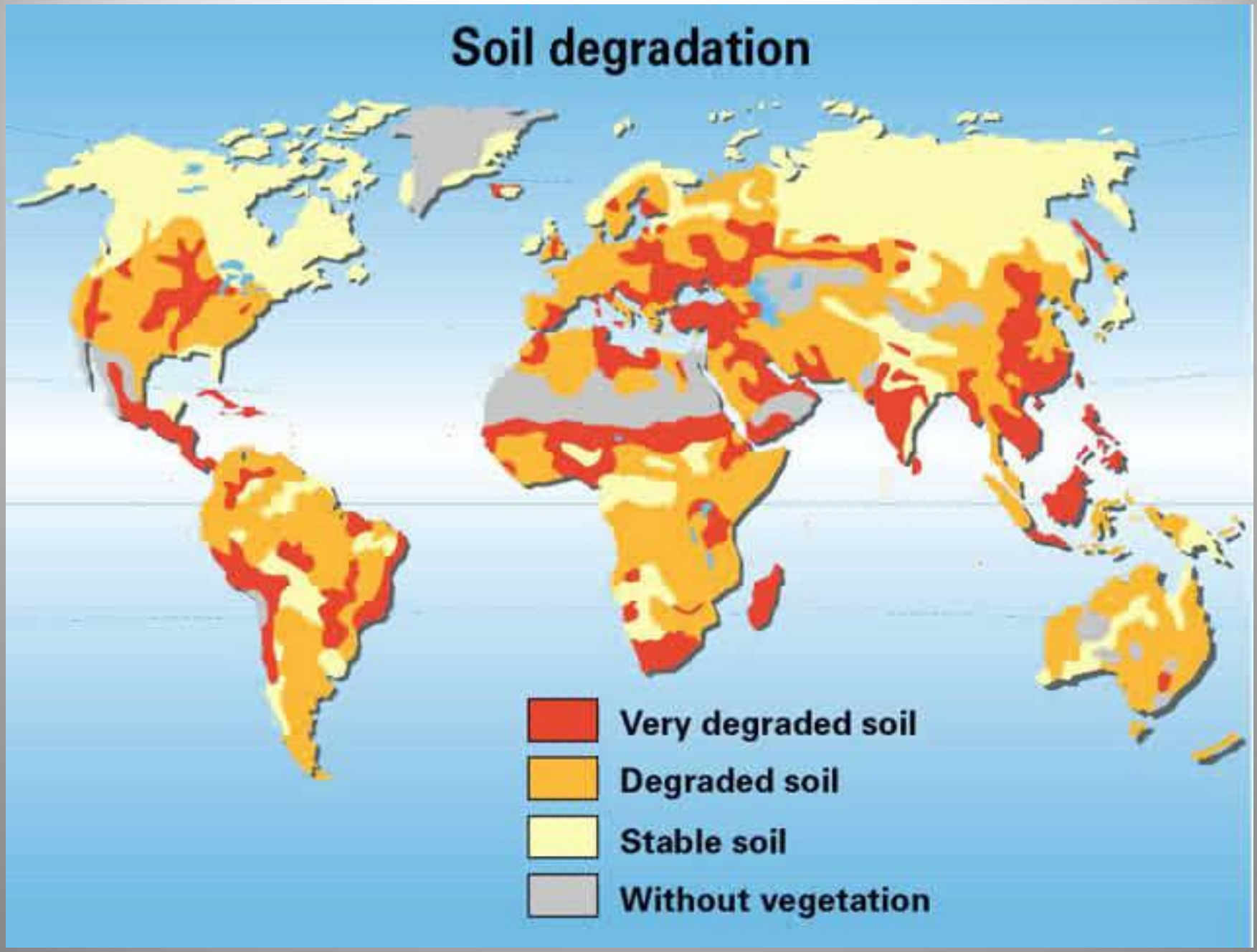
All the water and air in the world. On the left, all the world's water (some 1.41 billion cubic kilometers) is shown as a ball covering central Europe. On the right, the entire atmosphere (5140 trillion tonnes) at sea level pressure is a slightly larger ball.
Composed by Dr Adam Nieman from topographical data

Estimated annual world water use



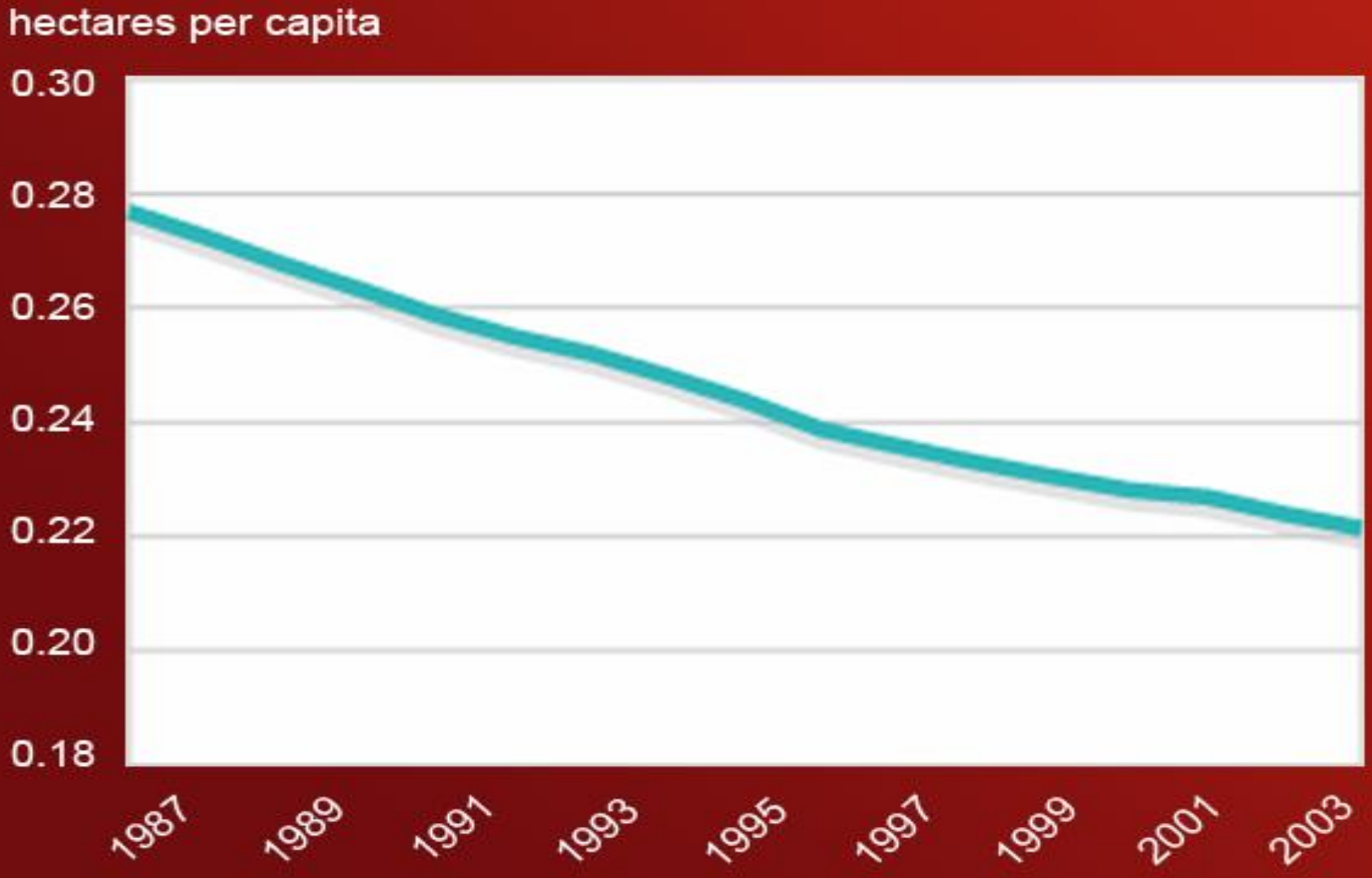
embedded water





Philippe Rekacewicz, UNEP/GRID-Arendal

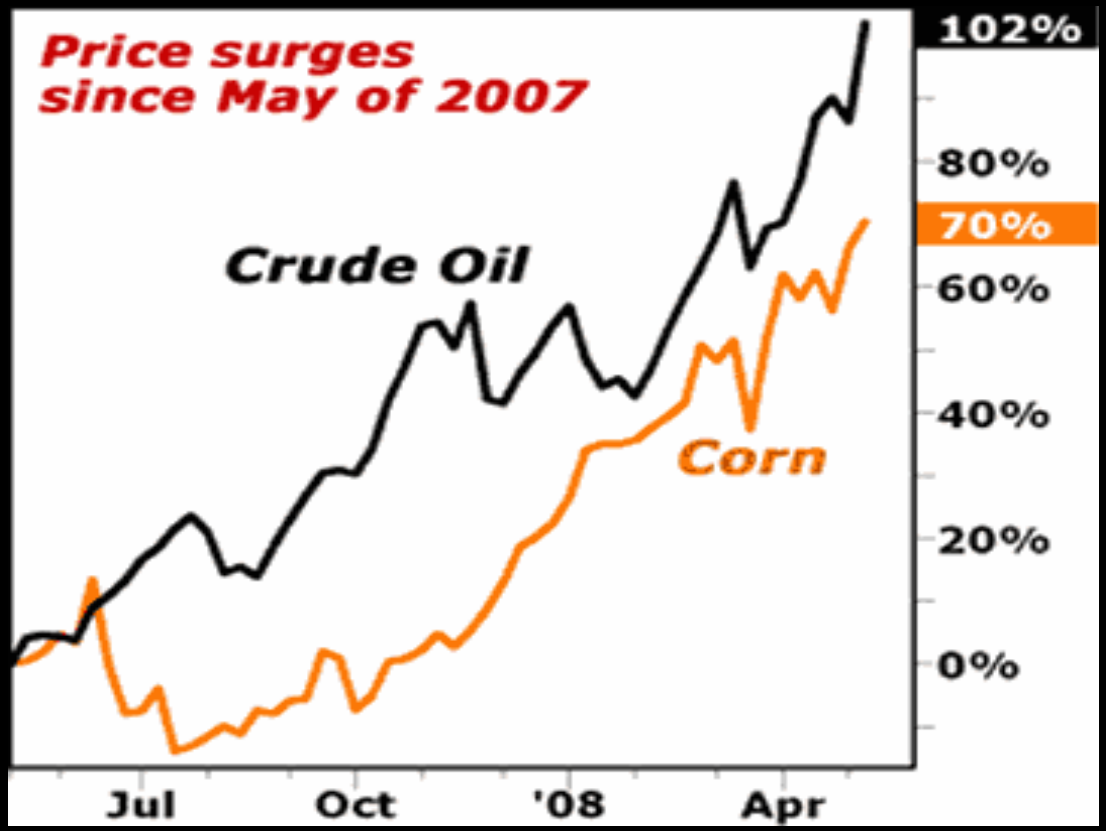
Per capita arable land



"It's no secret anymore that for every nine barrels of oil we consume, we are only discovering one."

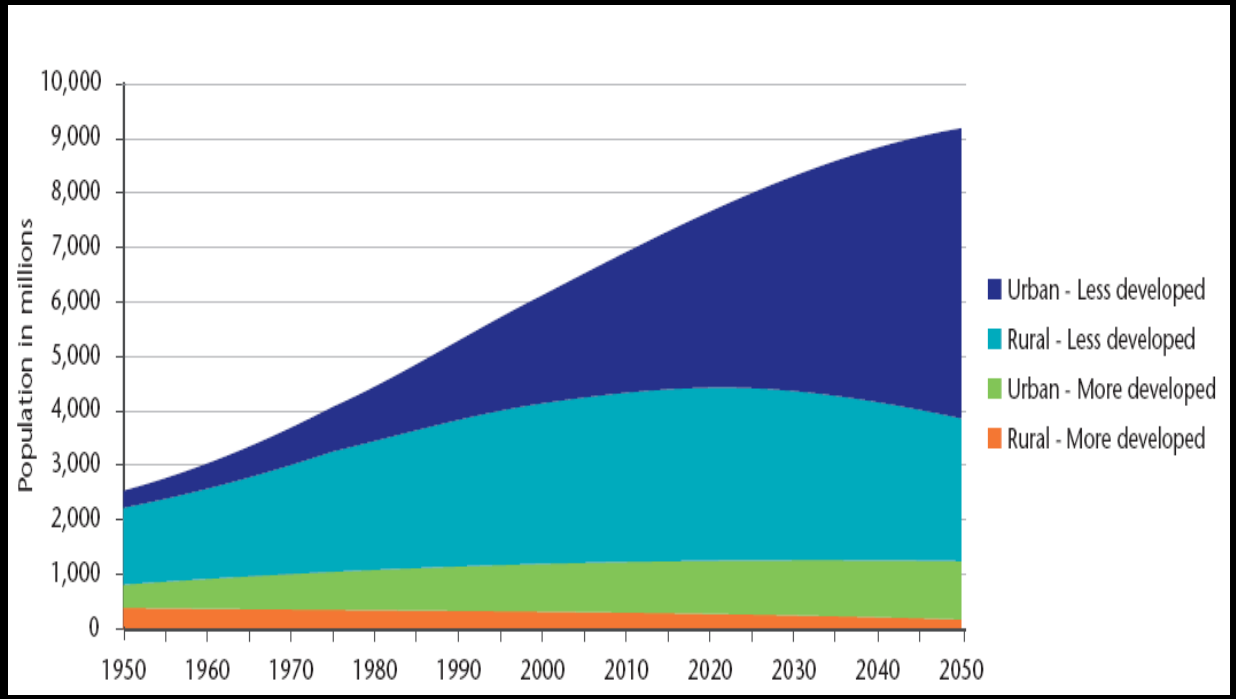
BP Statistical Review
of World Energy

November 11th, 2009


Price surges
since May of 2007
Crude Oil
Corn
102%
80%
70%
60%
40%
20%
0%
Jul
Oct
'08
Apr

The world population is increasing, and is increasingly urban

Global population by type of area and by region 1950–2050

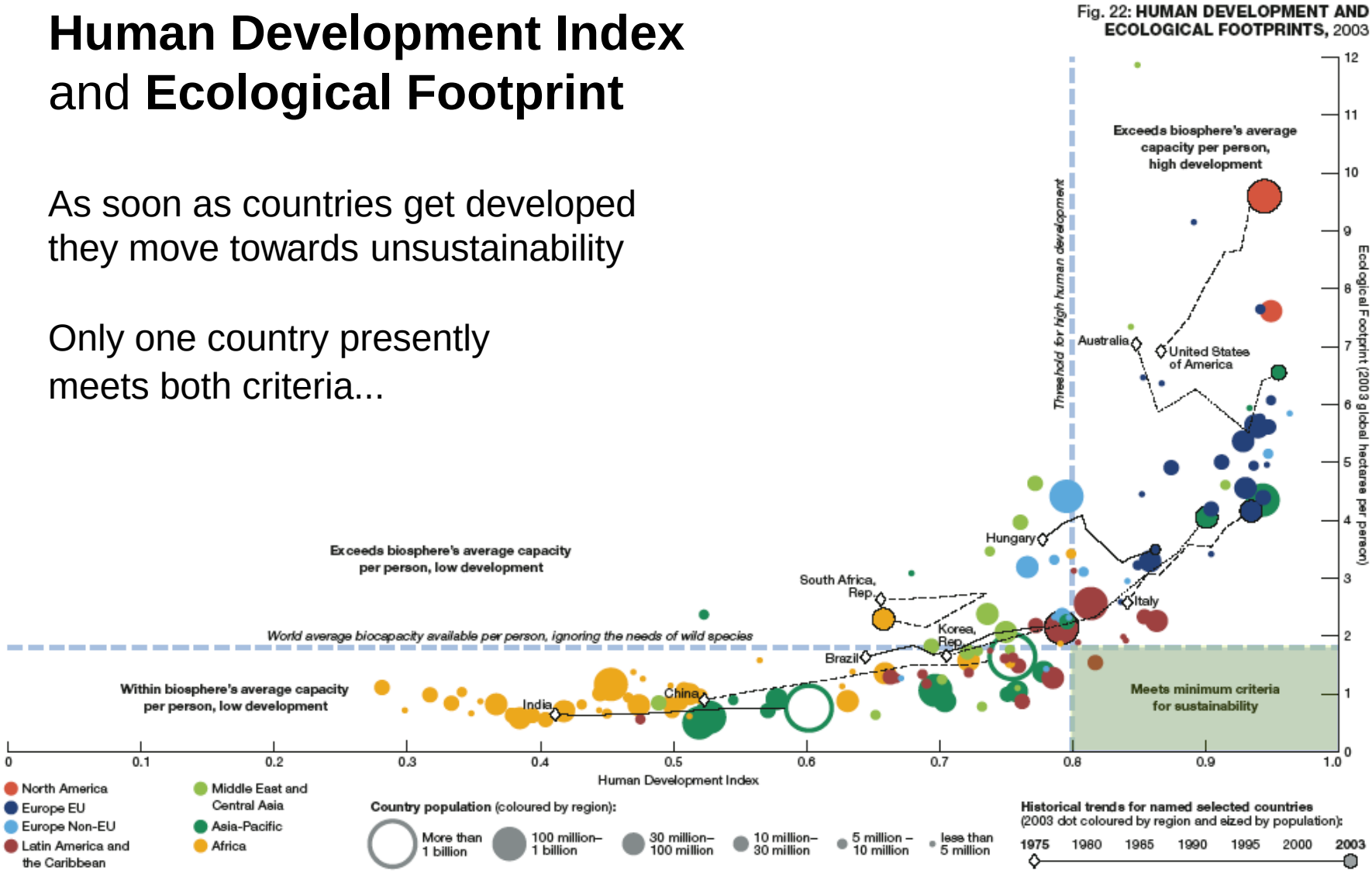


Source: UN Population Division, World population prospects: The 2008 revision (2008)

Human Development Index and **Ecological Footprint**

As soon as countries get developed they move towards unsustainability

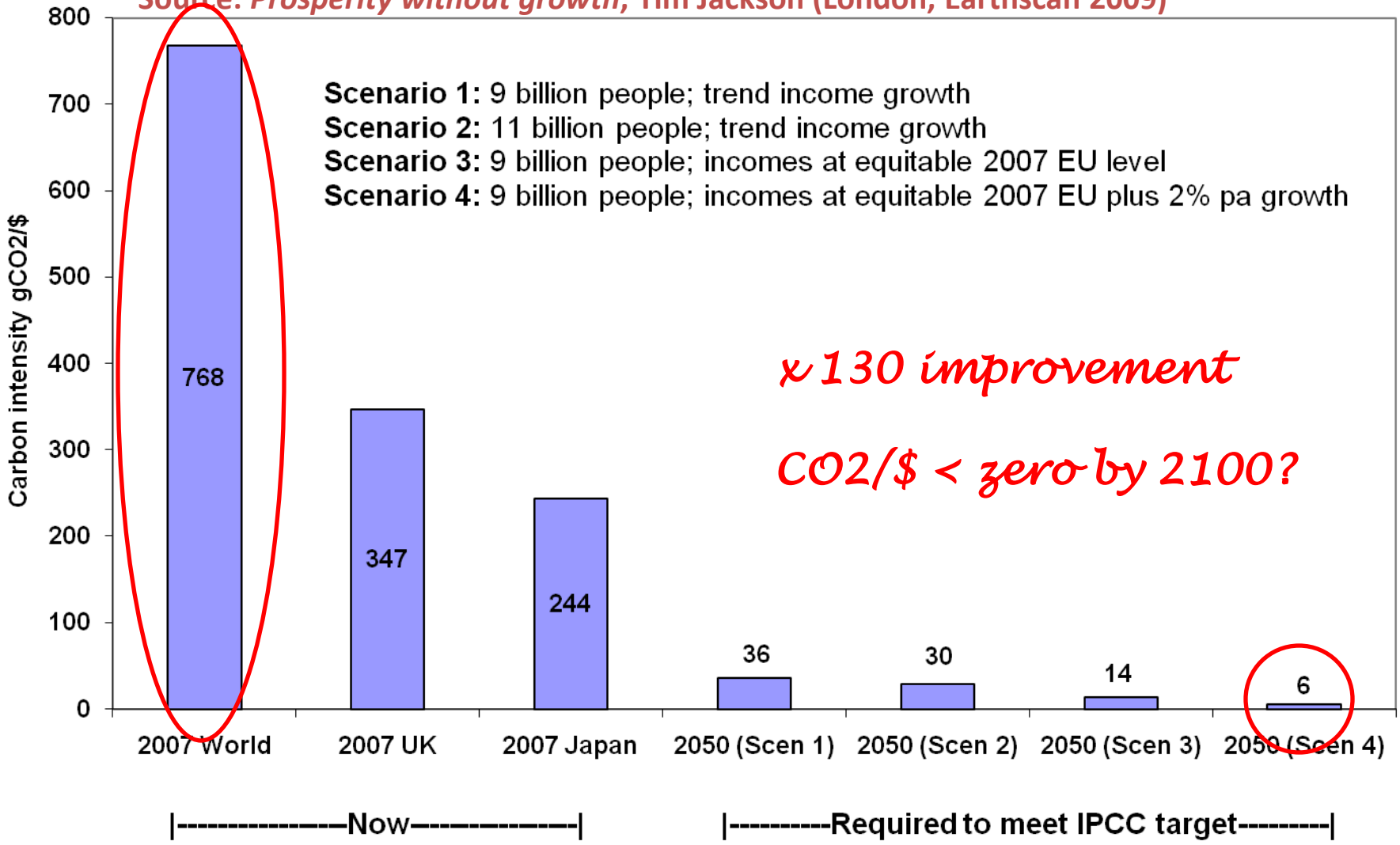
Only one country presently meets both criteria...



WWF Living Planet Report 2006

The Dilemma of Growth

Source: *Prosperity without growth*, Tim Jackson (London, Earthscan 2009)



We are not doing enough – not by a long way

And its not only an environmental challenge that is posed by these environmental trends - the risks are economic and social

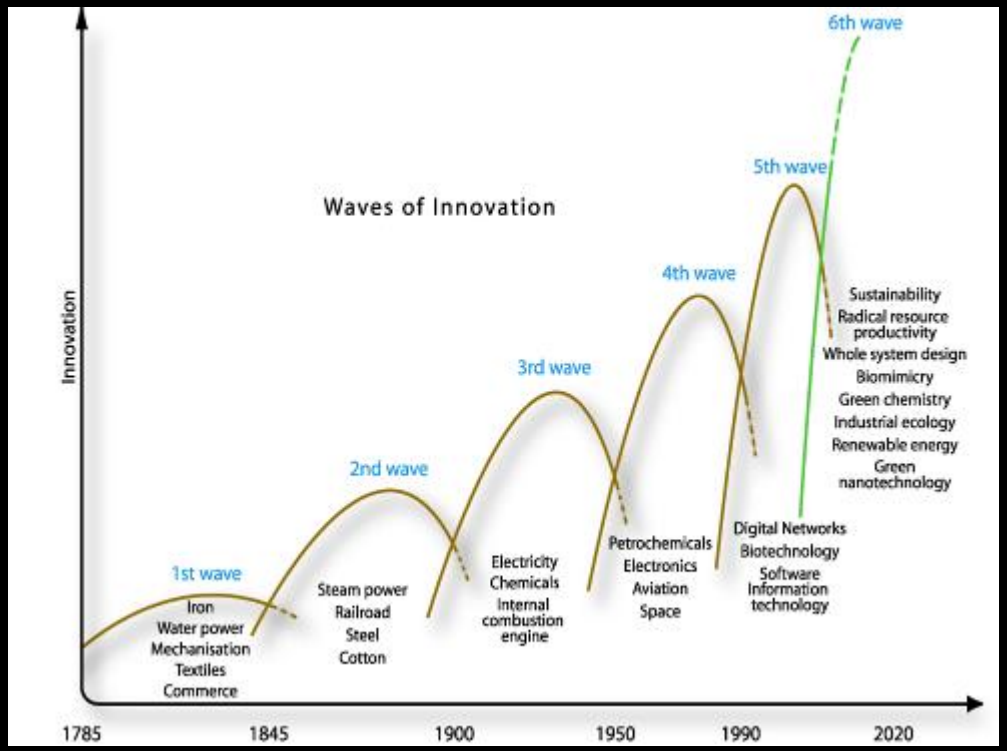
But we are not doomed, at least not necessarily !

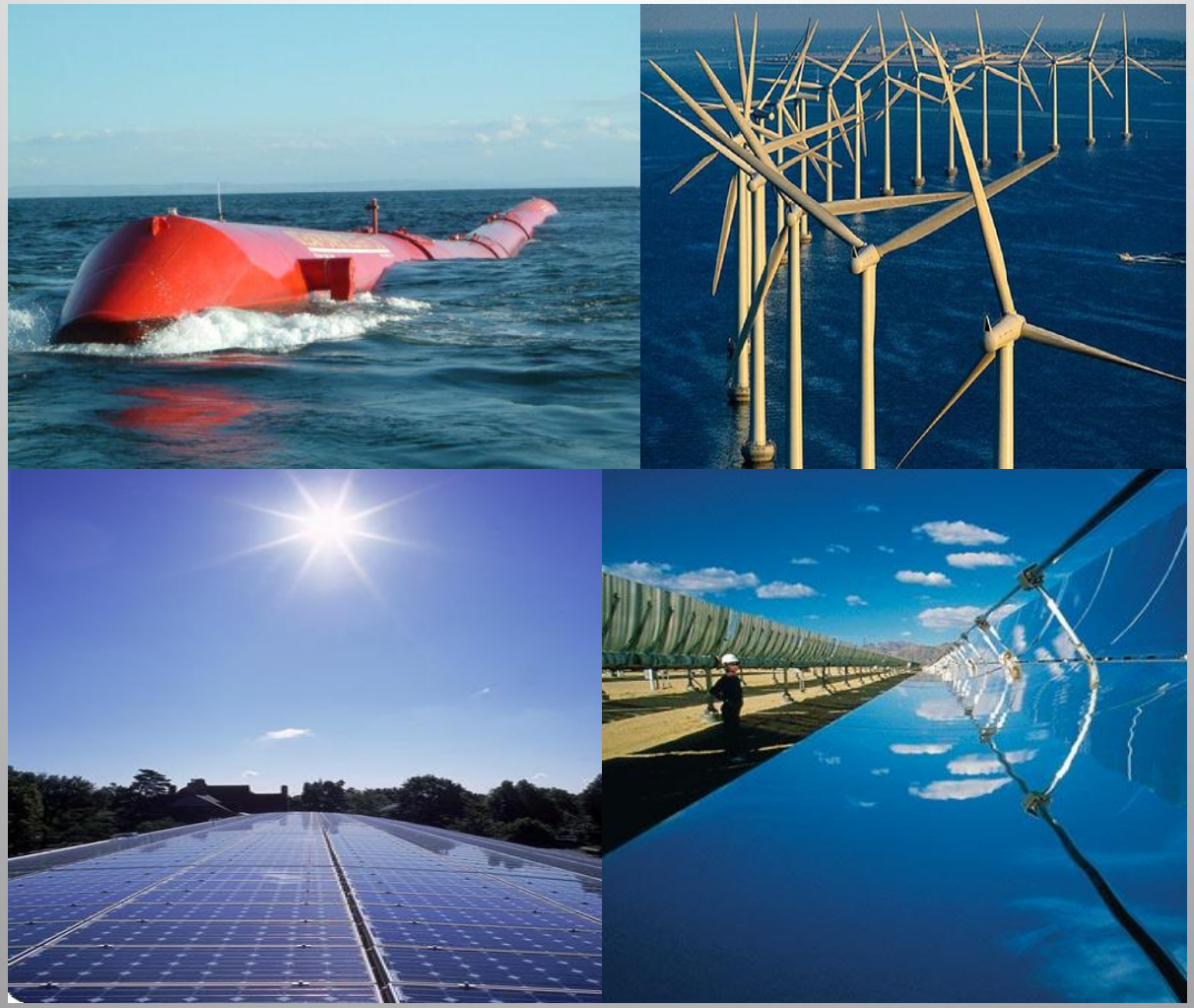
Risk, yes, but opportunity as well…

"Against the current background of eight interdependent crises (demography, ethics, social-economic, food, water, climate, energy and political), the third industrial revolution emerges from the corporate industry's opportunity to benefit from the upcoming trends. Companies can reap profits from consumers' social and environmental concerns and the understanding that resource scarcity will result in a permanent change to business models."

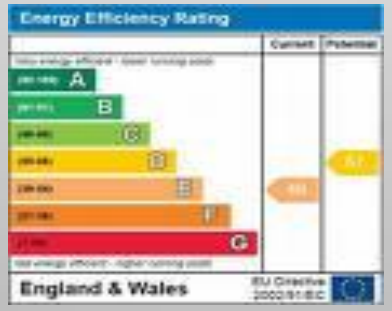
The Third Industrial Revolution, ING, *March 2010*

Waves of innovation



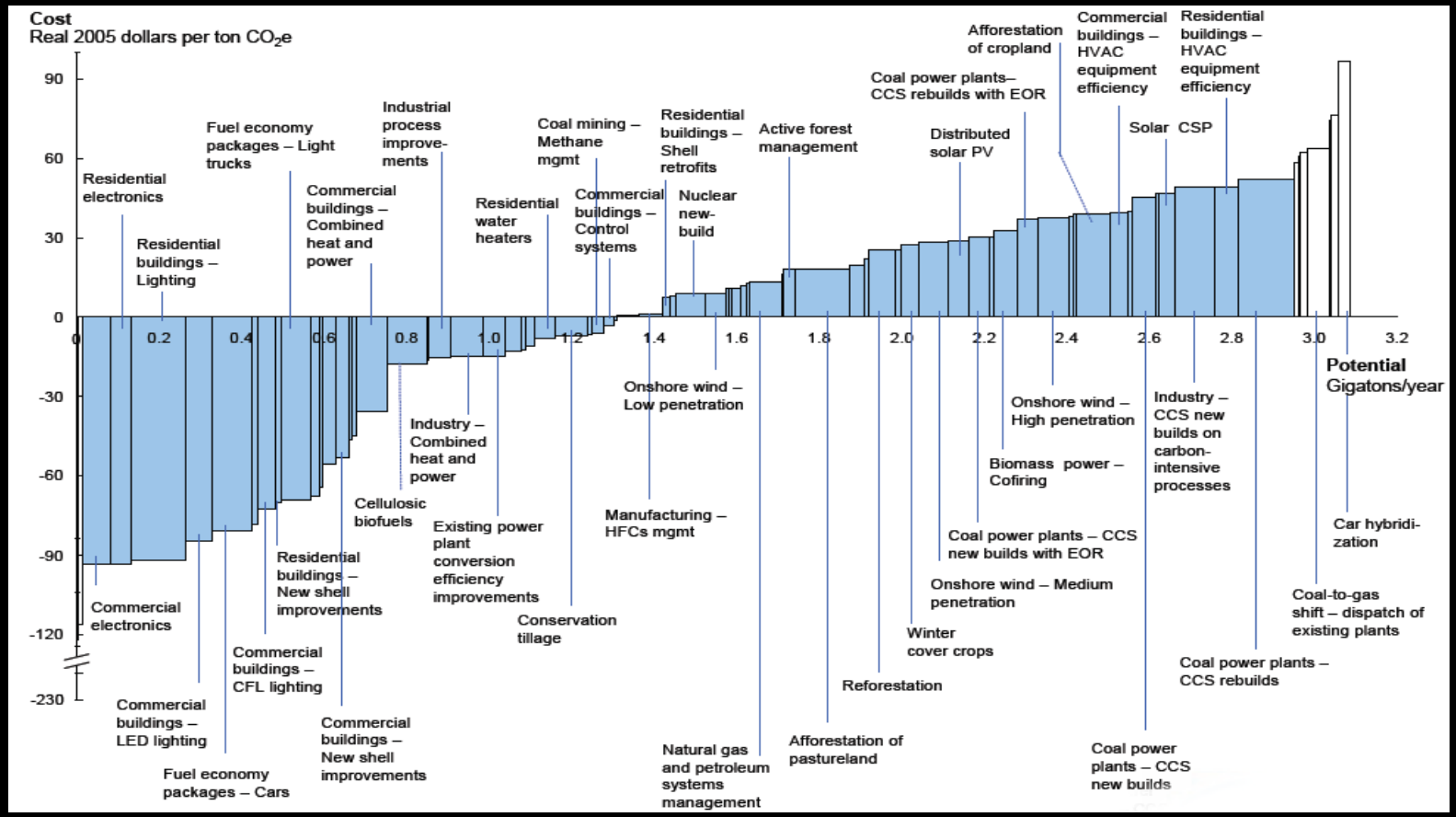


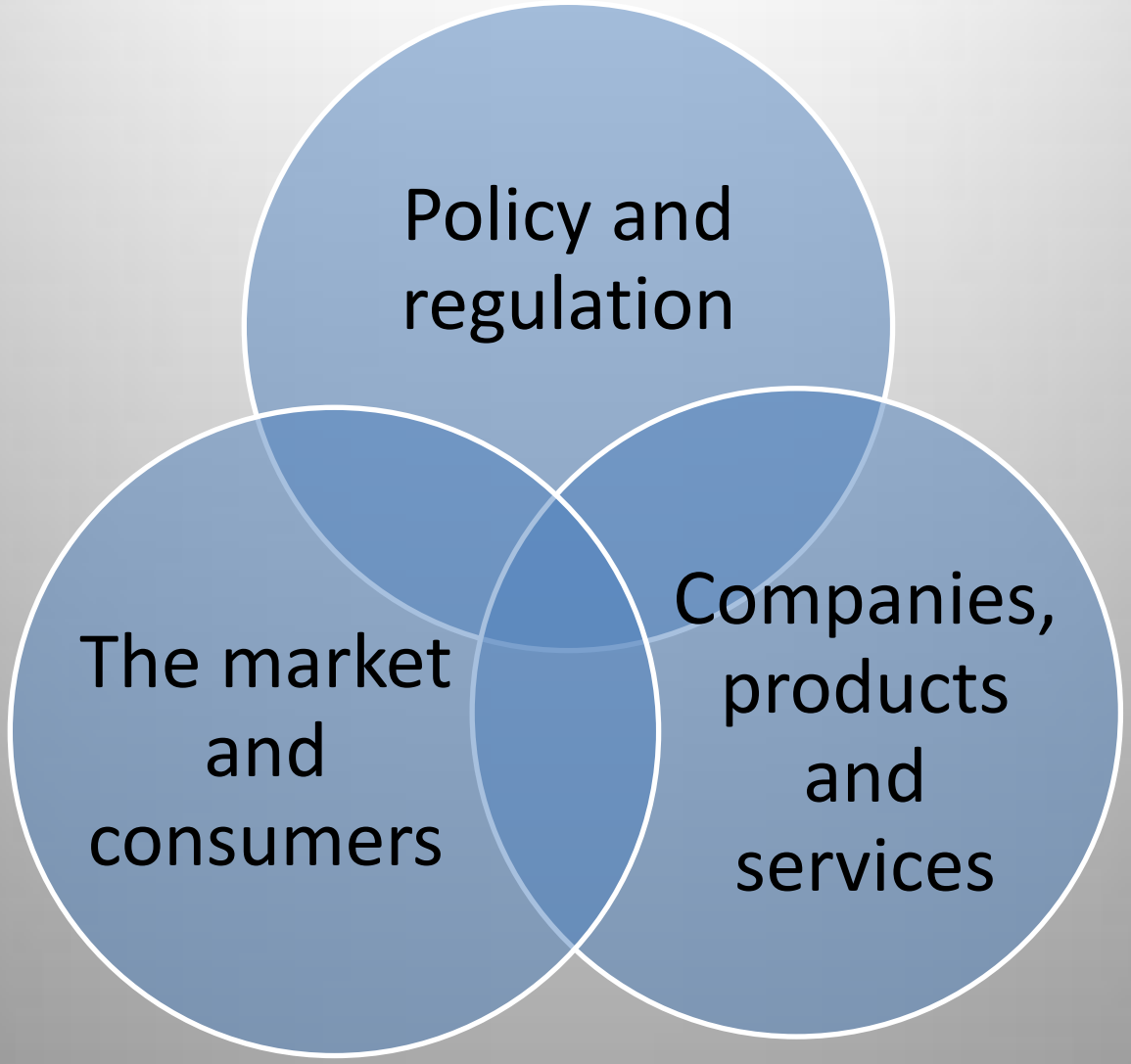
Low carbon energy generation technology



more efficient use of energy

Many low carbon technologies are already cost effective




Policy and regulation
The market and consumers
Companies, products and services

Businesses and their supply chains

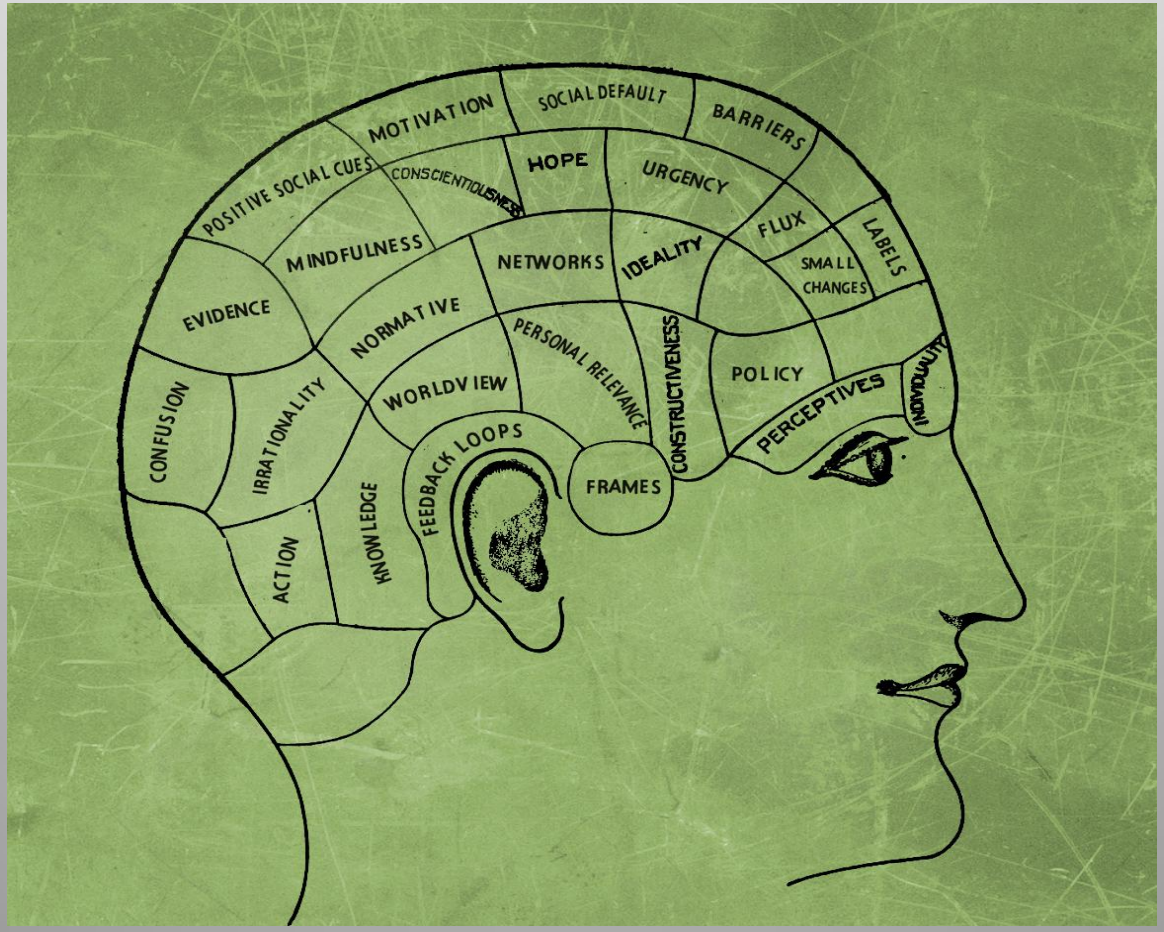
Products and services


I shop
therefore
I am

Politics


Wall St

Psychology


MOTIVATION
SOCIAL DEFAULT
BARRIERS
POSITIVE SOCIAL CUES
CONSCIENTIOUSNESS
HOPE
URGENCY
FLUX
LABELS
MINDFULNESS
NETWORKS
IDEALITY
SMALL CHANGES
EVIDENCE
NORMATIVE
PERSONAL RELEVANCE
CONSTRUCTIVENESS
POLICY
INDIVIDUALITY
CONFUSION
IRRATIONALITY
WORLDVIEW
FEEDBACK LOOPS
FRAMES
PERCEPTIVES
ACTION
KNOWLEDGE

There is no silver bullet. Lots of approaches are needed. While there are major challenges, positive solutions exist. Achieving integrated outcomes that meet economic social and environmental goals is a long term process, but it must gather pace urgently.